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09/382,763	08/25/1999	GEORGE E. DEROME	ADIC-1	5650

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EXAMINER
CHOW, CHARLES CHIANG

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/382,763	Applicant(s) DEROME ET AL.	
	Examiner Charles Chow	Art Unit 2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Office Action for
Applicant's Amendment
(September/19/2002)

1. Regarding applicant's argument for the no teaching, no support, of the calculation of variance for controlling amplitude/phase offset; the single signal stepping from Maxwell; the modulating said signal corresponding to the sum of the sine wave signals;

   a newly introduced patent to Schlosser-'194 (claim 17) teaches the calculating of the amplitude/phase variance for controlling the amplitude and phase using weighting factors deduced from the variance of the amplitude/phase (abstract, col. 2, lines 7-38). The summer for summing the weighted signals to produce a final output transform signal with best signal component enhanced (col. 8, line 66 to col. 9, line 3).

   Regarding the single signal stepping from Maxwell, Maxwell does teaches the generating of various frequencies for nearby motor vehicles, or other emergency vehicles (in abstract, col. 2, lines 21-41). The audio message are sending over frequencies that are determined for particular location (Fig. 8, step 364, 368).

   Regarding the modulating said signal corresponding to the sum of the sine wave signals, Morris-'763, teaches one of the examples to sum (24) of sine wave signals (with 90 degree phase difference) from local oscillators to mixer 21,22 as shown in figure in cover page.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Argo et al. (US 4,764,978) in view of Maxwell (US 5,635,921)

Argo discloses **claim 1**, a transmitter, comprising a multi-signal generator for simultaneously providing a plurality of signals within a selected frequency band and having a center frequency and relative frequency spacing of said simultaneous plurality of signals (emergency radio transmitter as shown in Fig1, Fig. 2, abstract, for transmitting plurality of frequency signals of the entire frequency spectrum bands, abstract, for the simultaneously transmitting on AM, FM radio frequencies, as shown in col. 2, line 17-26; using AM band comb frequency generator and FM comb frequency generator, col. 7 lines 27-38).
Argo considers the divide means 100, mixer 200, and the multiplied by 9 in 430 (Fig. 2) for providing the frequency spacing.
Argo discloses a modulator connected to said multi-signal generator for selectively and simultaneously modulating said plurality of signals, as shown in Fig. 2, the varactor modulator 390 for FM (Fig. 2), the AM modulator 260 (Fig. 2).

Argo does not include the details for the selectively controlling of the center frequency.
Maxwell teaches the center frequency is selectively adjusted to cover at least a portion of the selected frequency band (preselected various frequency bands, including emergency, police frequency bands, in abstract, summary of invention; using DDS 112 to adjust the center frequency, and the method of step 304 for determining of the particular frequencies).

Maxwell teaches a control unit for selectively controlling at least one of said multi-signal generator center frequency and relative frequency spacing (as shown in col. 8, line 51-57, col. 10, line 17-19 for the relative spacing frequencies for the AM, FM signals. The frequency controller 44 programs frequency spacing of the preselected desirable different frequencies for terminal 54, as shown in col. 7, line 27-53. In Fig. 4, the DDS 112' receives the controlling signal 120 from the control block 118. It is apparently obvious to include Maxwell's selectively controlling the center frequency of the band and frequency spacing, to Argo's system. By doing so, Argo's emergency system would be upgraded for flexibly changing the center frequency of a frequency band with adjustable frequency spacing for covering more frequency bands for the emergency broadcast. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Maxwell's selectively control the center of the frequency band and the frequency spacing, to Argo, such that the emergency system could be upgraded to cover more frequency bands by changing the center of the frequency band.

Regarding **claim 2**, Maxwell teaches the wave memory for reproducing a selected waverform output signal providing said plurality of signals (Fig. 4, Read Only Memory 204, the address input, the receiving control from 120 for producing different waveforms at 114, 154, and plurality of frequencies from DDS 112, for the determined selected plurality of frequency sets). It is apparently obvious to include Maxwell's different waveforms stored in the read only memory. The stored different waveforms would efficiently provide the waveform modulation of the broadcast carries immediately by just lookup the address input to the read-

only memory. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Maxwell's efficient memory waveforms lookup, Argo as modified above, such that the system could efficiently accessing the modulating waveforms for the carriers.

Regarding **claim 3**, Argo has disclosed the plurality of frequencies of the set for AM band, FM band, as shown above the AM comb generator, the FM comb generator.

In the above it does not include the selective transferring of the prestored waveforms.
Regarding **claim 4**, Maxwell teaches the control unit provides prestored waveforms selectively transferred to said wave memory to provide said plurality of signals on a corresponding portion of said selected band, see in Fig. 3, the control block 118, signal 120, signal 140. In Fig. 2, col. 7, line 27, col. 7, line 39-46, the frequency control 44, for providing the transferred data for selected different frequencies.
Maxwell also teaches **claim 5**, the waveform converter to reproduced selected converted input signal, see in Fig 4, the digital to analog converter D/A 213 for reproduce the data incoming from latch 209, ROM 204. It is apparently obvious to include Maxwell's transferring of the stored waveform, D/A converter to Argo's system. By doing so, Argo's system could efficiently generate the modulated signal by swiftly referencing the stored waveform in the waveform memory, as shown above. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Maxwell's waveform transferring and D/A converter, to Argo as modified above, such that the system

could efficiently generate the modulated signal by referencing the stored waveform.

Argo discloses **claim 6,** the audio source 22 having a switch for the tape 22 for the audio memory, the microphone 32 being selective connected to the AM modulator 260, the converter such as the varactor diode FM modulator 390. Argo teaches the selection of the audio sources from audio memory or microphone.

Regarding **claims 7, 8, 9**, referring to the discussion in claim 1, as shown above, that Maxwell considers the programmable generator DDS 112, the mixer 108, AM modulator 150, the preselected frequencies of various radio bands, AM, FM , emergency frequencies, police band, fire fighter frequencies, in abstract. In Fig. 6, the step 304 for the means for determining of what frequencies are used in a particular location, for the selectively varied plurality of the different portions of the selected band. Maxwell discloses the utilization of the control 118, frequency control 44, for the controlling of the programmable signal generator, DDS 112. Maxwell utilizes the AM modulator150, the mixer 108, for the connection to the DDS 112 of the programmable signal generator.

Regarding **claims 10, 11**, referring to the discussion in claims 1, 6, which also provides the claimed features for the audio memory, the microphone, selectively connected to said frequency modulator.

3. Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Argo in view of Maxwell, and further in view of Wilson (US 5,602,868).

In the above it does not explicitly indicate the power amplifier selectively receiving the mixer output.

Wilson teaches **claim 12**, a power amplifier selectively receiving from one of said mixer output signal and said converted signal, and providing a transmitter output signal, see in abstract, front figure, Fig. 1, for a multiple-modulation communication system, having the

element 200, for the FM, AM, including 201-207, 211-217, AM/FM selecting switch 209, the mixer 219. In col. 5, line 16-21, the mixer 219 sends signal to the power amplifier 105, 111. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Wilson's selecting AM or FM for the power amplifier, to Argo, such that power amplifier could selects the signal for each band.

Regarding **claim 13**, Maxwell has shown above, the first signal and the second signal generator having DDS outputs 114, for FM band spaced-frequencies, the AM band spaced frequencies, the control 118 means, the mixer, the power amplifier 132, 162. Referring to claim 1 above for the plurality of carries signals from Argo.

Regarding **claim 14**, referring to the discussion in claim 6, which also provides the claimed features for the audio memory, the microphone.

Regarding **claim 15**, referring to the discussion in claim 1, which also provides the claimed features for the selecting of the frequencies, and the determining means for the selection from various different frequency sets, from Maxwell, for the substantially selected

portion.

Regarding **claim 16**, referring to the discussion in claims 1, which also provides the claimed features for the fist, second signal generator, the mixer.

4. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Argo in view of ~~Morris (US 5,162,763)~~ Hansinger (US 5,465,396), and further in view of Schlosser (US 5,289,194).

In the above, it does not explicitly indicate the details for the sum of the sine wave. Hansinger ~~Morris~~ teaches **claim 17**, providing a corresponding sum of sine wave signals each corresponding to one of the set of carrier frequency, dividing the sum, calculating a variance, changing the phase repeating transmitting, sum of said sine wave signals; see in abstract, Fig. 4, col. 9, line 54-58, the modulator 52, 60, the sum 56 for summing 68, for the AM message, AM LO, the FM message, the output 24 AM over FM. Hansinger ~~Morris~~ teaches the sum of sine wave signals (with 90 degree phase difference) from local oscillators to mixer 21,22 as shown in figure in cover page, which is one of the example of summing the sine waves. Schlosser teaches the calculating of the amplitude/phase variance for controlling the amplitude and phase using weighting factors deducted from the variance of the amplitude/phase (abstract, col. 2, lines 7-38). The summer for summing the weighted signals to produce a final output transform signal with best signal component enhanced (col. 8, line 66 to col. 9, line 3). It is apparently obvious to include Morris's sum (24) of the sine waves from oscillators with different phases, and Schlosser's weighting factor of the amplitude and

phase control using calculated variance from amplitude and phase, to Argo as modified above, such that the system could be upgraded for controlling the amplitude and phase variations of the summed carriers using the calculated variance. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and include Morris's sum (24) of the sine waves from oscillators with different phases, and Schlosser's weighting factor of the amplitude and phase control using calculated variance from amplitude and phase, to Argo as modified above, such that the system could be upgraded for controlling the amplitude and phase variations of the summed carriers using the calculated variance.

Referring also to Hunsinger-'396 below for the teaching of the summing into time segment (the 52.6 microsecond. waveform generators 354-358 to the summer in Fig. 17).

Regarding **claim 18**, referring to the discussion in claim 17 above, which also provides the claimed features for the randomly changing the phase relationship of the sine wave signals.

Regarding **claim 19**, referring to the discussion in claim 1, which also provides the claimed features for the selecting of a set of frequencies.

Regarding **claim 20**, referring to the discussion in claim 1, which also provides the claimed features for the AM, FM.

5. Claims 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Argo in in view of Hunsinger et al. (US 5,465,396).

In the above it does not include the sum of sine wave signals.

Hunsinger teaches **claim 21**, modulating said signal corresponding to the sum of said sine wave signals, see in front figure, abstract, col. 9, lie 54-58, for simultaneously transmission of the AM over the FM to the broadcast band, utilizing the sum 22 for generating the composite signal, AM over FM for transmission. It is apparent obvious to include Hunsinger's summing of the sine wave for AM, FM signals to Argo, such that Argo's system could efficiently transmit the summed signal from one antenna. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Hunsinger et al.'s means for summing, generating the composite signal AM over FM, to Argo, such that AM signal could share the common frequency translation element, power amplifier, and using single antenna.

Regarding the single signal stepping from Maxwell, Maxwell does teaches the generating of various frequencies for nearby motor vehicles, or other emergency vehicles (in abstract, col. 2, lines 21-41). The audio message are sending over frequencies that are determined for particular location (Fig. 8, step 364, 368).

Regarding **claim 22**, referring to the discussion in claim 22 above for the translation the sum of the AM over FM to the broadcast band, in the abstract.

Response to Arguments
And
Conclusion

6. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's amendment for the no teaching, no support, of the calculation of variance for controlling amplitude/phase offset; the single signal stepping from Maxwell; the modulating said signal corresponding to the sum of the sine wave signals;

a newly introduced patent to Schlosser-'194 (claim 17) teaches the calculating of the amplitude/phase variance for controlling the amplitude and phase using weighting factors deduced from the variance of the amplitude/phase (abstract, col. 2, lines 7-38). The summer for summing the weighted signals to produce a final output transform signal with best signal component enhanced (col. 8, line 66 to col. 9, line 3).

Regarding the single signal stepping from Maxwell, Maxwell does teaches the generating of various frequencies for nearby motor vehicles, or other emergency vehicles (in abstract, col. 2, lines 21-41). The audio message are sending over frequencies that are determined for particular location (Fig. 8, step 364, 368).

Regarding the modulating said signal corresponding to the sum of the sine wave signals, Morris-'763, teaches one of the examples to sum (24) of sine wave signals (with 90 degree phase difference) from local oscillators to mixer 21,22 as shown in figure in cover page, which is one of the example of summing the sine waves.

In view of the prior arts, the arguments are moot, and claims 1-22 are remaining in the rejection manner.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703)-308-6732.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Charles Chow

December 2, 2002.

DANIEL HUNTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600